



# Revised MATERIAL SAFETY

EPON CURING AGENT V-40  
6014

MSDS NUMBER

81-6

PAGE 1

97367 (4-85)

<b>24 HOUR EMERGENCY ASSISTANCE</b>		<b>GENERAL MSDS ASSISTANCE</b>	
SHELL: 713-473-9461 CHEMTREC: 800-424-9300		SHELL: 713-241-4819	
ACUTE HEALTH + 3	FIRE 1	REACTIVITY 0	HAZARD RATING LEAST - 0 SLIGHT - 1 MODERATE - 2 HIGH - 3 EXTREME - 4
*For acute and chronic health effects refer to the discussion in Section III			



<b>SECTION I</b>		NAME	
PRODUCT	EPON CURING AGENT (R) V-40		
CHEMICAL NAME	FATTY ACID-POLYETHYLENEPOLYAMINE BASED POLYAMIDE MIXTURE		
CHEMICAL FAMILY	POLYAMIDE		
SHELL CODE	43694		

SECTION II-A		PRODUCT/INGREDIENT	
NO.	COMPOSITION	CAS NUMBER	PERCENT
P	EPON CURING AGENT V-40	MIXTURE	100
1	FATTY ACID POLYAMIDES	*	84-84
2	TRIETHYLENETETRAMINE	112-24-3	6-16

\*THE SPECIFIC IDENTITY OF THIS COMPONENT IS CONSIDERED TRADE SECRET INFORMATION.

SECTION II-B		ACUTE TOXICITY DATA	
NO.	ACUTE ORAL LD50	ACUTE DERMAL LD50	ACUTE INHALATION LC50
P	>5 G/KG (RAT)	>8 G/KG	NOT AVAILABLE
1	NOT AVAILABLE		
2	2500 MG/KG (RAT)	805 MG/KG (RABBIT)	NOT AVAILABLE

## SECTION III HEALTH INFORMATION

THE HEALTH EFFECTS NOTED BELOW ARE CONSISTENT WITH REQUIREMENTS UNDER THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200).

### EYE CONTACT

BASED ON PRODUCT TESTING, PRODUCT IS EXTREMELY IRRITATING TO THE EYES AND MAY CAUSE SEVERE DAMAGE INCLUDING BLINDNESS. SEE OTHER HEALTH EFFECTS.

### SKIN CONTACT

BASED ON PRODUCT TESTING, PRODUCT IS MODERATELY IRRITATING TO THE SKIN. BASED ON THE PRESENCE OF COMPONENT 2, PRODUCT MAY CAUSE SKIN SENSITIZATION. BASED ON THE PRESENCE OF COMPONENT 2, PRODUCT MAY BE TOXIC IF ABSORBED THROUGH THE SKIN; MAY CAUSE SYSTEMIC EFFECTS. SEE OTHER HEALTH EFFECTS AND SECTION VI.

### INHALATION

MISTS OR VAPORS (ELEVATED TEMPERATURES) OF COMPONENT 2 MAY PRODUCE SEVERE RESPIRATORY IRRITATION AND SENSITIZATION HAZARDS, PRODUCING SEVERE INFLAMMATION INCLUDING LUNG; EXTREME CASES MAY BE FATAL

**INGESTION**

BASED ON THE PRESENCE OF COMPONENT 2, PRODUCT MAY PRODUCE SEVERE BURNS OF MOUTH AND THROAT AND IRRITATION OF THE GASTROINTESTINAL TRACT. BASED ON PRODUCT TESTING, PRODUCT IS SLIGHTLY TOXIC ON INGESTION. BASED ON THE PRESENCE OF COMPONENT 2, PRODUCT MAY PRODUCE SYSTEMIC EFFECTS IF INGESTED. SEE OTHER HEALTH EFFECTS AND SECTION VI.

**SIGNS AND SYMPTOMS**

IRRITATION AS NOTED ABOVE. SKIN SENSITIZATION (ALLERGY) MAY BE EVIDENCED BY RASHES, ESPECIALLY HIVES. LUNG SENSITIZATION (E.G., ALLERGY, ASTHMA) MAY BE EVIDENCED BY WHEEZING WITH SHORTNESS OF BREATH AND COUGH.

**AGGRAVATED MEDICAL CONDITIONS**

PREEXISTING SKIN, EYE, AND RESPIRATORY DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT. PREEXISTING SKIN OR LUNG ALLERGIES MAY INCREASE THE CHANCE OF DEVELOPING INCREASED ALLERGY SYMPTOMS FROM EXPOSURE TO THIS PRODUCT.

**OTHER HEALTH EFFECTS**

ALTHOUGH PRODUCT IS NOT CORROSIVE BY D.O.T. OR RCRA CRITERIA, PROLONGED EYE EXPOSURE MAY CAUSE EXTREME IRRITATION AND SEVERE DAMAGE, INCLUDING BLINDNESS. COMPONENT 2 WAS FOUND TO BE EMBRYO/FETOTOXIC BUT NOT TETRATOGENIC IN GUINEA PIGS EXPOSED DERMALLY AND IN RATS EXPOSED IN A FEEDING STUDY (1.67% OF THE DIET).

**SECTION IV****OCCUPATIONAL EXPOSURE LIMITS**

NO.	PEL/TWA	OSHA PEL/CEILING	TLV/TWA	ACGIH TLV/STEL	OTHER
P	NONE ESTABLISHED				
1	NONE ESTABLISHED				
2	NONE ESTABLISHED				

**SECTION V****EMERGENCY AND FIRST AID PROCEDURES****EYE CONTACT**

IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE HOLDING EYELIDS OPEN. RINSE CONTINUOUSLY WITH WATER WHILE ON WAY TO GET MEDICAL ATTENTION.

**SKIN CONTACT**

IMMEDIATELY REMOVE CONTAMINATED CLOTHING OR SHOES, WIPE EXCESS FROM SKIN AND FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. USE SOAP IF AVAILABLE OR FOLLOW BY WASHING WITH SOAP AND WATER. DO NOT REUSE CLOTHING UNTIL THOROUGHLY CLEANED. GET MEDICAL ATTENTION. CONTAMINATED LEATHER ARTICLES, INCLUDING SHOES, CANNOT BE DECONTAMINATED AND SHOULD BE DESTROYED TO PREVENT REUSE.

**INHALATION**

REMOVE VICTIM TO FRESH AIR AND PROVIDE OXYGEN IF BREATHING IS DIFFICULT. GET MEDICAL ATTENTION.

**INGESTION**

DO NOT INDUCE VOMITING. DO NOT GIVE LIQUIDS TO A VERY DROWSY, CONVULSING OR UNCONSCIOUS PERSON. GIVE LARGE QUANTITY OF WATER. IF VOMITING OCCURS, REPEAT LIQUID ADMINISTRATION. GET MEDICAL HELP IMMEDIATELY.

**SECTION VI****SUPPLEMENTAL HEALTH INFORMATION**

COMPONENT 2 HAS BEEN FOUND TO PRODUCE LIVER AND KIDNEY DAMAGE AND KIDNEY AND BRAIN CONGESTION IN DERMALLY EXPOSED ANIMALS.

COMPONENT 2 WAS FOUND TO BE A DIRECT ACTING MUTAGEN IN THE AMES ASSAY; IT GAVE POSITIVE RESULTS WITH AND WITHOUT ACTIVATION.

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**SECTION VII PHYSICAL DATA**  
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BOILING POINT: DECOMPOSES (DEG F)      SPECIFIC GRAVITY: 0.96 (H2O=1)      VAPOR PRESSURE: NEGLIGIBLE @ 20 DEG C (MM HG)

MELTING POINT: NOT AVAILABLE (DEG F)      SOLUBILITY: SLIGHT (IN WATER)      VAPOR DENSITY: >1 (AIR=1)

EVAPORATION RATE (N-BUTYL ACETATE = 1): NOT AVAILABLE

APPEARANCE AND ODOR: AMBER, VISCOUS LIQUID WITH AMMONIACAL ODOR.

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**SECTION VIII FIRE AND EXPLOSION HAZARDS**  
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FLASH POINT AND METHOD: >428 DEG F (COC)      FLAMMABLE LIMITS /% VOLUME IN AIR  
LOWER: N/APP      UPPER: N/APP

**EXTINGUISHING MEDIA**

USE WATER FOG, FOAM, DRY CHEMICAL OR CO2. DO NOT USE A DIRECT STREAM OF WATER. PRODUCT WILL FLOAT AND CAN BE REIGNITED ON SURFACE OF WATER.

**SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS**

MATERIAL WILL NOT BURN UNLESS PREHEATED. DO NOT ENTER CONFINED FIRE SPACE WITHOUT FULL BUNKER GEAR (HELMET WITH FACE SHIELD, BUNKER COATS, GLOVES AND RUBBER BOOTS), INCLUDING A POSITIVE PRESSURE NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS. COOL FIRE EXPOSED CONTAINERS WITH WATER.

**UNUSUAL FIRE AND EXPLOSION HAZARDS**

MAY PRODUCE HAZARDOUS VAPORS AND FUMES OR HAZARDOUS DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS. NITROGEN OXIDES AND NITROGEN CONTAINING ORGANIC COMPOUNDS MAY BE RELEASED UPON COMBUSTION.

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**SECTION IX REACTIVITY**  
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STABILITY: STABLE      HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

**CONDITIONS AND MATERIALS TO AVOID:**

AVOID CONTACT WITH STRONG OXIDIZING AGENTS. REACTION WITH EPOXY RESINS CAN PRODUCE CONSIDERABLE HEAT. (SEE SECTION XII).

**HAZARDOUS DECOMPOSITION PRODUCTS**

NITROGEN OXIDES, CARBON MONOXIDE AND UNIDENTIFIED ORGANIC COMPOUNDS (SOME CONTAINING NITROGEN) MAY BE FORMED DURING THERMAL OR OXIDATIVE DECOMPOSITION OR COMBUSTION. SEE SECTION XII.

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**SECTION X EMPLOYEE PROTECTION**  
-----**RESPIRATORY PROTECTION**

AT ELEVATED TEMPERATURES OR IF MISTS ARE CREATED, INHALATION EXPOSURE IS POSSIBLE, USE A NIOSH-APPROVED RESPIRATOR AS REQUIRED TO PREVENT OVEREXPOSURE. IN ACCORD WITH 29 CFR 1910.134, USE EITHER A FULL-FACE, ATMOSPHERE-SUPPLYING RESPIRATOR OR AN AIR-PURIFYING RESPIRATOR FOR ORGANIC VAPORS.

**PROTECTIVE CLOTHING**

AVOID CONTACT WITH EYES. WEAR CHEMICAL GOGGLES IF THERE IS LIKELIHOOD OF CONTACT WITH EYES. AVOID CONTACT WITH SKIN AND CLOTHING. WEAR CHEMICAL-RESISTANT GLOVES AND PROTECTIVE CLOTHING.

**ADDITIONAL PROTECTIVE MEASURES**

USE VENTILATION AS REQUIRED TO CONTROL VAPOR CONCENTRATIONS. EYE WASH FOUNTAINS AND SAFETY SHOWERS SHOULD BE AVAILABLE FOR EMERGENCY USE.

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**SECTION XI ENVIRONMENTAL PROTECTION**

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**SPILL OR LEAK PROCEDURES**

MAY BURN ALTHOUGH NOT READILY IGNITABLE. USE CAUTIOUS JUDGMENT WHEN CLEANING UP LARGE SPILLS. \*\*\* LARGE SPILLS \*\*\* WEAR RESPIRATOR AND PROTECTIVE CLOTHING AS APPROPRIATE. SHUT OFF SOURCE OF LEAK IF SAFE TO DO SO. DIKE AND CONTAIN. REMOVE WITH VACUUM TRUCKS OR PUMP TO STORAGE/SALVAGE VESSELS. SOAK UP RESIDUE WITH AN ABSORBENT SUCH AS CLAY, SAND OR OTHER SUITABLE MATERIAL; DISPOSE OF PROPERLY. FLUSH AREA WITH WATER TO REMOVE TRACE RESIDUE. \*\*\* SMALL SPILLS \*\*\* TAKE UP WITH AN ABSORBENT MATERIAL AND DISPOSE OF PROPERLY.

**WASTE DISPOSAL**

UNDER EPA - RCRA (40 CFR 261), IF THIS PRODUCT BECOMES A WASTE MATERIAL, IT WOULD NOT BE A HAZARDOUS WASTE. PLACE IN AN APPROPRIATE DISPOSAL FACILITY IN COMPLIANCE WITH LOCAL REGULATIONS.

**ENVIRONMENTAL HAZARDS**

EPA - COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT. UNDER EPA-CERCLA ("SUPERFUND") RELEASES TO AIR, LAND OR WATER MAY BE REPORTABLE TO THE NATIONAL RESPONSE CENTER, 800-424-8802 (CIRCUMSTANCES SURROUNDING THE RELEASE AND CLEANUP DETERMINE REPORTABILITY).

COMPONENT 2 IS RESISTANT TO BIODEGRADATION IN BIOLOGICAL WASTE WATER TREATMENT PLANTS. IT COULD BE TOXIC TO THE BIOMASS IN A TREATMENT PLANT AND COULD BE TOXIC TO FISH.

KEEP OUT OF SURFACE WATERS, SEWERS, AND WATERWAYS ENTERING OR LEADING TO SURFACE WATERS. NOTIFY AUTHORITIES IF ANY EXPOSURE TO THE GENERAL PUBLIC OR ENVIRONMENT OCCURS OR IS LIKELY TO OCCUR.

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**SECTION XII SPECIAL PRECAUTIONS**

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STORE IN A COOL, DRY PLACE WITH ADEQUATE VENTILATION. KEEP AWAY FROM OPEN FLAMES AND HIGH TEMPERATURES.

WARNING. EXTREMELY IRRITATING TO THE EYES. POTENTIAL SENSITIZER. CONTAINERS, EVEN THOSE THAT HAVE BEEN EMPTIED, CAN CONTAIN HAZARDOUS PRODUCT RESIDUES. WASH WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING, APPLYING COSMETICS, OR USING TOILET FACILITIES. LAUNDRY CONTAMINATED CLOTHING BEFORE REUSE. CONTAMINATED LEATHER ARTICLES INCLUDING SHOES CANNOT BE DECONTAMINATED AND SHOULD BE DESTROYED.

HEATING THIS CURING AGENT IN THE PRESENCE OF AIR MAY CAUSE THERMAL AND OXIDATIVE DECOMPOSITION. WITH SOME EPOXY RESINS, IT MAY PRODUCE EXOTHERMIC REACTIONS WHICH IN LARGE MASSES CAN CAUSE RUNAWAY POLYMERIZATION AND CHARRING OF THE REACTANTS. FUMES AND VAPORS FROM THESE THERMAL AND CHEMICAL DECOMPOSITIONS VARY WIDELY IN COMPOSITION AND TOXICITY. DO NOT BREATHE FUMES. USE A NIOSH-APPROVED RESPIRATOR AS REQUIRED TO PREVENT OVER EXPOSURE.\*

\*IN ACCORD WITH 29 CFR 1910.134, USE EITHER AN ATMOSPHERE-SUPPLY RESPIRATOR OR AN AIR-PURIFYING RESPIRATOR FOR ORGANIC VAPORS.

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**SECTION XIII TRANSPORTATION REQUIREMENTS**

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DEPARTMENT OF TRANSPORTATION CLASSIFICATION: NOT REGULATED  
D.O.T. PROPER SHIPPING NAME: NOT REGULATED

**OTHER REQUIREMENTS:**  
D.O.T ID. NO. NOT REGULATED.

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**SECTION XIV OTHER REGULATORY CONTROLS**

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THE COMPONENTS OF THIS PRODUCT ARE LISTED ON THE EPA/TSCA INVENTORY OF CHEMICAL SUBSTANCES.

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THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE CORRECT. HOWEVER, SHELL MAKES NO WARRANTY, EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SHELL ASSUMES NO RESPONSIBILITY FOR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.  
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DATE PREPARED: DECEMBER 11, 1987  
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**BE SAFE**

READ OUR PRODUCT  
SAFETY INFORMATION ...AND PASS IT ON  
(PRODUCT LIABILITY LAW  
REQUIRES IT)

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**JOHN P. SEPESI**  
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